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**AN ANNOTATED LIST OF LITERATURE REFERENCES  
ON CARPETS AND RUGS, 1940 TO 1963**

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*U.S.* Agricultural Research Service //  
**UNITED STATES DEPARTMENT OF AGRICULTURE**

## PREFACE

For more than 20 years rapid changes have developed in the carpet industry, and in carpets and rugs made for homes in the United States.

This annotated list of references on carpets and rugs has been produced in a limited subject breakdown to render bibliographical information more accessible to the reader by placing together references dealing with the same or allied problems. However, there is overlapping of information in references but the attempt has been made to list each reference under the heading to which it contributes the largest fraction of knowledge on that subject.

The bibliography includes the subject breakdown listed in a table of contents, a general introduction, a brief introductory paragraph to each subject breakdown, and an authors index.

The general introduction is a brief summary of the author's thoughts after reading and annotating each reference listed.

The introductory paragraph to each subject breakdown points up an important aspect or two, of the vast body of knowledge in the literature references that follow it. The aim of the paragraph is to encourage the reader to explore each subject breakdown for himself.

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# AN ANNOTATED LIST OF LITERATURE REFERENCES ON CARPETS AND RUGS 1940 TO 1963

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Compiled and Annotated by Martha L. Hensley<sup>1</sup>

## INTRODUCTION

There is no magic instrument endowed with a power to give its bearer a complete single factual answer to many of the questions asked by consumers today on the selection and care of carpets and rugs.

To understand why there can be no one answer to many of the most commonly asked questions, a consumer needs some knowledge of the complexities of the total rug and carpet industry and its relation to the homes where its products are used.

To date there is no fiber or yarn for carpets and rugs that is fully engineered to meet all the exacting demands of every situation in American homes. If one fiber contained all the desired characteristics for a perfect carpet pile for every situation the manner of combining it with a perfect backing would mean controlling both the pile and the backing in every step of construction in the carpet with absolute precision.

The contents of the literature references point up the vastness, the strength, the weaknesses, and the problems of the carpet industry with its involvement in science, research, engineering, economics, psychology, sociology, agriculture, commerce, and in some instances art and architecture.

All of the references have been written, edited, or translated between 1940 and 1963. They are organized under nine headings. Under this organization the history, growth, and development of the carpet and rug industry with its efforts to meet the demand of the consuming public can be easily traced.

The references relate history, show growth, report research, give directions for making rugs, make suggestions for judging quality, paint up the confusion in markets due to many synthetic fibers and yarns, inform on fiber shortages and tariff controls, encourage competition and salesmanship, urge cleaning and care, stress perfection in fibers and yarns, and make an effort to clarify the purpose of the manufacturer in meeting the needs of the consumer.

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<sup>1</sup> Agricultural Research Service.

## ORIENTAL CARPETS AND RUGS

Early conceptions of nomad weavers as to what constitutes a useful and beautiful carpet have influenced hand- and machine-made ones for many centuries. Early carpets were specifically designed for diverse uses and functions. These include the dowry rug, the wedding rug, the hearth rug, and the hospitality rug all woven to the time-honored rules. Later the throne rug, the mosque rug, and the prayer rug, the rugs of kings, caliphs, and shahs became a part of the culture and civilization of people who expressed themselves through rug weaving. Color is of integral and supreme importance in all Oriental life. Old dyes were incomparable in beauty. The pile of wool, silk, or a combination of the two distinguishes all Oriental carpets. A study of publications as those listed show clearly that many modern and so-called systems of proportions and design, also desired characteristics of excellent quality in a carpet are a direct outcome of these ancient ideas.

- (1) Brinkley, Rosemary

1952. *Rugmaking*. 87 pp., illus. New York, N.Y., Dover Publications.

Describes the main methods of making Oriental rugs and the tools used. The photographs include a treasury of good designs of rugs in museums.

- (2) Dilley, A. U.

1959. *Oriental Rugs and Carpets* (Rev. by M. S. Dimand.) 289 pp. New York, N.Y., J. P. Lippincott Co.

Discusses the beginning of Oriental rugs made by shepherd tribes, those in the historical period of Assyrian and Babylonian Empires, and the rugs of kings, caliphs, and shahs.

- (3) Dimand, M. S.

1962. Some Peasant and Nomad Oriental Rugs. *Antiques* 81(5): 520-525, illus.

Describes Oriental rugs from Turkey, Persia, Caucasus, and Central Asia, which were included in an exhibition, Peasants An Nomad Rugs of Asia, held in the fall of 1961 at Asia House Gallery New York. The illustrations include the prayer, garden, animal, and geometrical rugs as designated by the weaver's design.

- (4) Edwards, A. C.

1953. *The Persian Carpet*. 384 pp., illus. London, Eng., Gerald Duckworth Co.

Gives a record of the weaving industry in Persia today in addition to a detailed survey of the weaver's craft - maps of the weaving areas, photographs of the localities where carpets are made and of the processes employed in making them - and a collection of Persian carpet and rug designs.

- (5) Erdmann, Kurt  
1960. Oriental Carpets (Trans. by C. G. Ellis.) 78 pp., illus.  
New York, N.Y., Universe Books.  
An essay on the history of Oriental carpets including the genesis of the knotted rugs and their production method, design of the early Ottoman rug, the Persian carpets, and Chinese, Indian, and Spanish rugs; those on the fringe of Oriental rugs.
- (6) Gregorian, A. J.  
1949. Oriental Rugs and the Stories They Tell. 94 pp., illus.  
Boston, Mass., The Taylor Press.  
Discusses the culture and civilization of people who express themselves through rug weaving, with the purpose of helping consumers obtain rugs they will be happy to live with.
- (7) Haack, Herman  
1960. Oriental Rugs (Ed. and trans. by George and Cornelia Wingfield Digby.) 76 pp., illus. London, Eng., Faber and Faber.  
The author guides the layman who has no special knowledge but wishes to acquire an understanding of Oriental rugs and carpets.
- (8) Hopf, Albrecht  
1961. Oriental Carpets and Rugs. 140 pp., illus. New York, N.Y., Viking Press.  
Describes and illustrates in color 20 Anatolian, 16 Caucasian, 19 Persian, and 4 Turkenian carpets, also fragments of the Holy Carpet, 1539-1540, from the workshop which produced the Ardebil Carpet now in Victoria and Albert Museum, London.
- (9) Jacoby, Heinrich  
1952. How To Know Oriental Rugs and Carpets. 144 pp., illus.  
London, Eng., George Allen and Unwin Ltd.  
Lists Oriental rugs and describes them.
- (10) Jenanyan, S. S.  
1949. Anyone Can Read Oriental Rugs. 33 pp., illus. Berkley, Calif., Treasure - Art - Club Series.  
Analyzes an antique melas prayer rug depicting Aesop's Fable--The Hare and the Tortoise and an antique AK Hisser prayer rug depicting the Twenty-Third Psalm of the Old Testament. Each of these are deciphered for the first time after 35 years of research.
- (11) Kuhnel, Ernst; and Bellinger, Louisa  
1957. Cairne Rugs and Others Technically Related, 15th Century-17th Century (Textile Museum). 90 pp., illus. Washington, D.C., Washington National Pub. Co.  
Explores a rug industry carried on in Cairo, Egypt, during the late Mamluk and early Ottoman periods (15th-17th centuries). Gives factual data about spin, weave, and fibers as well as historical source material.

- (12) Kuhnel, Ernst; and Bellinger, Louisa  
1953. Catalogue of Spanish Rugs, 12th century--19th Century (Textile Museum). 64 pp., illus. Washington, D.C., Washington, National Pub. Co.  
Points out how typical Spanish rugs are distinguished from rugs of other countries. Gives an analysis, description, history, and style of 44 rugs in color.
- (13) Liebetrau, Preben  
1963. Oriental Rugs in Color (Trans. from the Danish by Katherine John.) 131 pp., illus. New York, N.Y., Macmillan Co.  
Gives descriptive comments on Oriental rugs in color plates.
- (14) Macey, R. E. G.  
1961. Oriental Prayer Rugs. 24 pp., Leigh-On-Sea, England, F. Lewis.  
Brings to the attention of connoisseurs, collectors, and other lovers of Oriental rugs the infinite variety that is to be found in prayer rugs.
- (15) May, C. J. Belabère  
1920. How To Identify Persian Rugs. 134 pp., London, England, G. Bell and Sons.  
Instructs readers in the knowledge of such facts as are necessary to identify any typical specimen of the better known classes of Persian rugs, with regard to their age, their merit, and their value.
- (16) Mostafa, Mohamed  
1953. Turkish Prayer Rugs. 78 pp., illus. Cairo, Egypt. The Ministry of Education Press.  
Describes the art of carpet knotting in Asia Minor, the ornamental motifs, the centers where rugs were knotted, and the material used. Gives the date of the prayer rugs. Analyzes the technical information on Turkish prayer rugs and explains each type of rug, its color, date, size, guide number, and registration number.
- (17) O'Brien, M. R. J.  
1951. The Rug and Carpet Book. 166 pp., illus. New York, N.Y., McGraw-Hill Book Co.  
The author discusses the history of Oriental rugs, types of motifs, weaves, and dyes, also the reproductions of historic styles in twentieth century developments. Includes information on Indian, early American hooked, embroidered, needlepoint, and American machine-made carpets.
- (18) Perez, Elia.  
1953. Oriental Rugs and Textiles - The Perez Collection (Commentary by F. Lewis.) 10 pp., illus. Leigh-On-Sea, England, F. Lewis.  
A pictorial record of specimens useful to collectors, to those interested in textiles, and those about to become interested who need some visual guide to salient features.

- (19) Pontremoli, J. M. and Lewis, F.  
1952. The Pontremoli Collection of Carpets and Textiles. 16 pp., illus. Leigh-On-Sea, England, F. Lewis.  
Gives a brief introduction to the collector and the details as to size and colorings of the 59 specimens including Aubusson, Russian, Ukrainian, Bessarabian, Persian carpets, also Victorian and needlework fabrics.
- (20) Raphaelian, H. M.  
1953. The Hidden Language. 230 pp., illus. New York, N.Y., A. Sivas.  
Discusses the hidden language of symbols in Oriental rugs through scheme of essays, descriptions, and pictures.
- (21) Schlosser, Tgnaz  
1963. The Book of Rugs, Oriental and European. 318 pp., illus. New York, N. Y., Crown Publishers.  
The historical section is devoted mostly to the sixteenth and seventeenth centuries, the Golden Age of the Eastern carpet in regions of Turkey, Persia, and the Caucasus. The influence of this period is developed in the second part of the book, in carpets of later dates.
- (22) Singh, D. J.  
1949. Growth of the Carpet Industry. Business Week 2(7): 11.  
Describes some of the remarkable achievements of the carpet industry of ancient people of Persia, Turkestan, China, and India, including shapes, uses, and breath-taking colors of carpets. Discusses the division of labor involved in making them.

## HANDMADE RUGS

Handmade rugs, woven, hooked, and braided were traditional furnishings in the early American home. Early artisans developed excellent designs. It is impossible to evaluate the effect of these handmade rugs on later machine-made carpets and rugs. In many instances they compare favorably with the so-called area rugs in popular demand today. Large machine-woven rag rugs and braided ones are available in retail markets. Most of the references listed include discussion on technique, materials, and designs.

- (1) Allard, Mary  
1963. Rug Making Techniques and Design. 160 pp., illus. Philadelphia, Penn., Chilton Co.  
Discusses techniques and designs of pile rugs, woven pile with knots, knotted pile without a loom, woven pile without knots, and the hooked rug.
- (2) Aller, Doris  
1953. Handmade Rugs. 95 pp., illus. Menlo Park, Calif., Lane Pub. Co.  
Discusses and illustrates the processes of making, hooked, braided, laced, knotted, and woven rugs.

- (3) Altpeter, Dorothy, Anderson, Corinne, and Thostesen, Margaret  
1949. How to Make Braided Rugs. 53 pp., illus. New York, N.Y.,  
Harper and Bros.  
Describes minutely each step in braided rug making. Shows how  
to interweave braid ends so that each ring, or loop of braid, is  
complete in itself, making it possible to produce completely re-  
versible rugs.
- (4) Bolander, E. L.  
1941. Stitching, Crocheting, Knitting, Hooked Rug Making. 47 pp.,  
illus. Springfield, Mass., Holden Pub. Co.  
Illustrates and describes the simple processes of knitting,  
crocheting, hooking, and knotting and how to use them to make  
rugs.
- (5) Gallinger, O. C., and Del Deo, J. C.  
1957. Rug Weaving For Everyone. 294 pp., illus. Milwaukee, Wis.,  
Bruce Pub. Co.  
A basic manual of instruction for rug designing and weaving.  
Covers the methods used in weaving all types of handwoven rugs.  
Gives directions for making rugs.
- (6) King, Helen  
1948. How To Hook Rugs. 48 pp., illus. Little Rock, Ark., D.P.  
and L Co.  
Instructs beginners how to hook rugs. Special emphasis is  
given to color schemes.
- (7) Kutnewsky, Fremont, and Holbrook, Cary  
1942. Navajo Rugs. Compressed Air Magazine 47(2): 658-662, illus.  
Relates the story of Navajo Indian weaving from blankets to  
rugs. Pictures the Spanish influence on the craft. Discusses the  
dyes, wools, and looms used, also the marketing of the product.
- (8) Lewes, Klares, and Hurran, Helen  
1962. Rug Weaving. 160 pp., illus. Newton Center, Mass., Charles  
Branford Co.  
Teaches rug weaving as a craft. The first section deals with  
techniques of rug weaving, the second with photographs of rugs by  
various designers representing simple and advanced work. An appen-  
dix contains instructions for two home-built looms.
- (9) McGowan, P. K.  
1951. You Can Hook Rugs. 316 pp., illus. Boston, Mass. Buck  
Printing Co.  
Discusses tools, dyeing, and designs for making hooked rugs.
- (10) Paternayan Bros  
1957. Handknotted Rug Weaving. 47 pp., illus. New York, N.Y.,  
Paternayan Bros.  
A manual of instruction for basic methods of handknotted rug  
weaving. Shows how to assemble and warp a loom and how to make  
such knots as Chiordes and Sehma.

## MACHINE-MADE CARPETS AND RUGS--HISTORY AND DEVELOPMENT

The history and development of machine-made rugs and carpets is a story of growth of a major industry involving elements such as engineering, economics, art, advertising, and salesmanship. The listed references show some of the scope and technical advancement of the industry.

- 1) Anonymous  
1961. Building and Starting a New Tufted Carpet Mill. *Textile World* 111(4): 82-85, illus.  
Explains step by step how a tufted carpet mill is consolidated into one plant instead of eight, lowering manufacturing costs and increasing efficiency. Emphasizes how the fast growth of tufted carpets is causing larger mills to leave scattered plants and move into modern consolidated ones.
- 2) \_\_\_\_\_  
1946. Carpets Can Be Knitted At High Production Rate. *Textile World* 96(8): 150, illus.  
Discusses the production of carpets by machine knitting. Claims that one operator would probably operate four or five machines producing approximately 100 yards of fabric per hour.
- 3) \_\_\_\_\_  
1963. Carpet Production and Tufting Machines. *Textile Recorder* 71(11): 139.  
Describes a major exhibition of textile machinery. Discusses new Wilton and Axminster looms, also the "needle" Axminster looms which uses pre-woven jute canvas as the backing, the tuft of pile being hooked in position by threads introduced by a series of needles. This method of binding tufts eliminates the use of latex to hold them in.
- 4) \_\_\_\_\_  
1949. Gas Infra-Red and High Air Velocity System for Drying and Curing Latex Backing on Carpets. *Rubber Age* 65(9): 670, illus.  
Discusses gas infra-red equipment with its capacity for production and operating costs in relation to steam and electric operating systems.
- 5) \_\_\_\_\_  
1956. How Tufted Carpets are Made. *Modern Textiles Magazine* 37(12): 40, illus.  
Describes briefly how tufted carpets are made and gives some information on the yardage produced and the dollar volume.
- (6) Abbenheim, P  
1959. New Way to Make Carpets. *Textile Industries* 123(9): 161-164, illus.  
Discusses ways of making carpets more rapidly and more cheaply than by traditional methods. Describes a machine that makes plain carpet at rate well above traditional loom, but below speed of tufting, producing carpet at a rate of 1,200 rows of tufts per minute.

- (7) American Carpet Institute.  
1962. Basic Facts About the Carpet and Rug Industry. 37 pp., illus.  
New York, N.Y., American Carpet Institute.  
Gives information on carpet and rug supplies and on the market  
of carpets and rugs.
- (8) Barach, J. L.  
1949. Dynamic Studies of Carpet Resilience. Textile Res. Jour.  
19(6): 355-362, illus.  
The problem of measuring dynamic properties of a carpet is  
carried through several different steps, which lead to the de-  
velopment of dynamic load measuring equipment designed to evalua-  
te differences of carpet construction.
- (9) Bradley, G. J.  
1960. Printing on Tufted Carpets. Modern Textiles Magazine 41(2):  
32-33, illus.  
Discusses a carpet printing unit developed by the Bradford  
Dyrer's Assoc., Ltd., that will bring the most intricate designs  
in up to eight colors on tufted carpets for as little as 60 cents  
per square yard.
- (10) Catlin, H. M.  
1949. Improved Carpet Looms Boost Weaving Production. Textile  
World 99(7): 125, illus.  
Discusses notable improvements in Axminster, velvet, and  
jacquard loom design, improvements to boost weaving production  
such as higher speeds, automatic stop motions, controlled lu-  
brication, and more rugged construction.
- (11) Coffin, H. S.  
1948. Bigelow-Sanford vs. Mohawk Carpet. Wall Street 83(11): 184-  
185, illus.  
Discusses the wide range of output, price range, comparative  
volume of growth, working capital position, and dividend yields  
of the two companies. Gives information on the prosperity of the  
carpet industry and the reconversion of the looms from the war  
production of duck and blankets to the production of carpets and  
rugs.
- (12) Cole, A. H, and Williamson, H. F.  
1941. The American Carpet Manufacture, a History and An Analysis.  
226 pp., illus. Cambridge, Mass., Harvard U. Press.  
Discusses the development of the carpet industry in its early  
period and its transformation including the technical advance and  
growth to its maturity with its organization, labor supply, earn-  
ings, markets, formation of trade associations, and the nature  
of competition.

- (13) Fesperman, J.  
1963. Another Tufting Revolution? Textile Industries. 127(5): 77-80.  
Points up the growth in yardage and the cost of tufted carpets from 1951 to 1962, a total of 65 million yards to 200 million yards. Discusses the selling of brand names on tufted carpets, the changing of carpets every 4 or 5 years, and the cleaning techniques of carpets versus hard floors.
- (14) Fitzgerald, T. J.  
1940. Manufacturers--Carpets, Rugs, and Other Floor Coverings. (16th Census of the U.S.) 11 pp., Washington, D.C. United States Printing Office.  
Contains general explanations and tables on establishments, classification by industries, wage earners and wages, cost of materials, power equipment, profits and production costs and price change.
- (15) Great Britain Board of Trade - Working Party Reports.  
1947. Carpets. 117 pp., illus. London, England, His Majesty's Stationery Office.  
Gives a historical and general survey of the industry; a technical review of types of carpets manufactured such as Wilton, Axminster, and chenille; types of design as traditional, Oriental, modern; marketing information at home and for export; and conditions within the industry.
- (16) Grierson, Ronald  
1955. Woven Rugs. 52 pp., illus. Peoria, Ill., Charles A. Bennet Co.  
Explains the craft of rug weaving by test and illustration. Describes parts of the loom and their function.
- (17) Hand, Jack  
1946. Rugs and Carpets and How To Sell Them. 126 pp., illus. Chicago, Ill., Merchandising Division, National Retail Assoc.  
Discusses the way floors can make money for furniture stores under the title "Every Floor is a Challenge." Gives information on what makes a good rug department, how to buy rugs and carpets, and how to sell them.
- (18) Johnson, W. H.  
1944. The Textile Arts. 137 pp., illus. Macmillan Co.  
Introduces youth to the field of textiles by text book form. Discusses terms used in rug and carpet weaving and machine-made carpets such as Axminster, Wilton, And Brussels.

(19) March, C. H., Chairman, and others

1941. Wool Carpet and Rug Manufacturing Corporations, Financial Statistics for Seven Corporations, Standard Industrial Classifications. No. 2271, 19 pp., Washington, D.C., Federal Trade Commission Industrial Corporation Reports.

Reports on "Wool Carpet and Rug manufacturing Corporations" in the Federal Trade Commissions project for the collection of annual financial reports from a large number of industrial corporations in many of the principal industries of the U.S.

(20) Marchetti, T.

1947. Design. Board of Trade Jour. 153: 273-275.

Discusses the importance of design and color in carpets manufacture in relation to tastes, requirements of different markets, and quantity production. Urges the British Carpet Trade to give more stimulus and encouragement to its artists, and the manufacturers to adopt a bolder policy and experiment with design, color, and texture.

(21) Mauersberger, H. R.

1946. Research on Carpets at Its Finest. Rayon Textile monthly 27(11): 586-588, illus.

Reports an inspection trip through a carpet plant. Describes briefly the research laboratory and the type of testing done on carpets and rugs.

(22) Newton, C. S.

1947. History and Tradition of European Carpets. Jour. Textile Inst. 38(3): 107-117, illus.

Discusses the history and describes the development and tradition in design of carpets in England and France. Makes a brief reference to the contributions of Spain, Poland, Scandinavia, and Belgium.

(23) Pressley, R. B.

1953. Machinery Changes Help Make Better Cotton Rugs. Textile World 103(1): 114-115, illus.

Gives examples of what one mill has done in building its own equipment and adopting standard equipment to fit special needs in its rug manufacturing processes. Explains how rugs are handled in the weaving, dyeing, latexing, and inspection processes.

(24) Roper, Elmo

1951. A Report on Habits and Attitudes Concerning Rugs and Carpets. Jour. Textile Inst. 42(8): P 815-P 816

Reports on abstract from a Consumer Reaction Study that gives the purpose and use of a survey made for the Carpet Institute in 1948. It mentions the effort made to provide a scientifically designed "sample" of interviews which would give results typical of the entire population, and some interesting conclusions.

- 25) Swan, C. J.  
1949. \$77,000 in Promotion and Publicity Sells In-Store Event to 207 Retailers. Printer's Ink 228(7): 26-28.  
Tells how the Carpet Institute, as a coordinator of new-in-store fashion show, persuades 2,478 retailers to spend \$1,360,604 in newspaper advertising with the idea the intangible impetus on fashions in carpets cannot be estimated.

- 26) Young, F. H.  
1943. A Century of Carpet Making - 1839-1939, 80 pp., Glasgow, Scotland. James Templeton Co.  
Gives the history of a firm that has manufactured carpets for more than a century. Treats the subject without technical details.

### FIBERS AND YARNS USED IN CARPETS AND RUGS

Extensive research has resulted in many synthetic fibers and yarns reported as meeting the tests for excellent carpets and yarns. There are also instances of improvements in the natural fibers that have been used for centuries in carpets.

- (1) Anonymous  
1940. Carpet Makers Try Rayon. Barron's, The National Financial Weekly 20(1): 5.  
Discusses carpet wool shortage and the blending of rayon with wool for carpets.
- (2) \_\_\_\_\_  
1942. Rugs of Cotton. Business Week (7):72.  
Discusses Karastan Rug Mills use of cotton as a substitute for wool in carpets. Presents advantages of cotton for floor coverings.
- (3) \_\_\_\_\_  
1949. Vinyon Gives New Carpet...Being Introduced by Firth...It's Hand Carved Effect. Rayon Textile Monthly 30(4): 96.  
Discusses the report of the American Viscose Corporation's vinyl resin plastic, Vinyon HH resin staple, used in the new "carved" broadloom by Firth Carpet Co. The report emphasizes the wearing qualities of a closely woven pile Axminster carpet.
- (4) \_\_\_\_\_  
1950. Special Rayon Staple for Rugs and Carpets. Rayon Textile Monthly 37(7): 50.  
Avisco 15, a rayon staple, specially designed for use in rugs and carpets by American Viscose Corporation is reported. Some of the characteristics of the new carpets made of the staple are reported.

(5) Anonymous

1950. Yarn Acceptance, What Carpet Producers Think of Synthetics as a Permanent Raw Material. Rayon Textile Monthly 31(9): 95.

A report of manufacturers acceptance of synthetic yarns for carpets. Comments on advantages of synthetics over wool such as cleanliness, like of mechanical problems in spinning or carding, and the availability in the market at a price less than wool.

(6)

1951. Welcome Mat For Cottons. Business Week (8): 114.

Discusses the rug manufacturers interest in cotton and rayon blends. Emphasizes the advantages of cotton over wool. One prophesies that all-wool will be obsolete in 10 years.

(7)

1957. Acrilan and Dynel Carpets Appear. Modern Textiles Magazine 38(1): 81.

Discusses the introduction of Acrilan and Dynel carpets in the retail market. Reports the results of extensive testing for wear and soil resistance in comparison with wool carpets.

(8)

1958. Man-made Fibers Take Over Carpets. Modern Textiles Magazine 39(3): 33, illus.

Discusses man-made fibers approach to equality with wool, as measured in poundage consumed. Describes the growing importance of nylon, and the established position of rayon as a carpet fiber also other new fiber trends in the market.

(9)

1958. New Carpet Ideas. Modern Textiles Magazine 39(6): 44-445.

Discusses the introduction of Acrilan carpets by Chemstrands acrylic. Describes licensing program aimed at insuring performance standards for carpets containing acrylic fiber. Also, mentions Eastman's Verel, another new acrylic.

(10)

1958. Textured Nylon Makes a Bid for Tufted Carpet Sales. Textile World 108(12): 52-53. illus.

Discusses the introduction in the market of a new tufted carpet of textured Caprolan by Craft Carpet Mills. Reasons for Craft moving into the market are: Wanted a fiber to be used season after season with (1) adequate constant supply, (2) reasonably constant cost, and (3) great wearability.

(11)

1958. Warning on Nylon Waste in Rugs. Modern Textile Magazine 39(5): 40.

A warning against the hidden danger of using nylon specifically produced for heavy industrial uses as carpet nylon.

(12) Annoyamous

1959. Man-made Fibers in Home Furnishings. Modern Textiles Magazine 40(9): 67-68.

Discusses new solution dyed yarn "Saranspun," textured Caprolan, and other filament yarns. Mentions a Certification for Performance Label that would meet these requirements for carpets: Rapid disappearance of furniture marks, ease of stain removal, texture retention after heavy traffic, and commercial cleaning colorfastness and stability.

(13)

1962. Enka Offers Nylon for Carpets. Modern Textiles Magazine 43(6): 35, illus.

Reports the introduction of a continuous filament textured nylon named "Enkaloft". Reports that Enka spins the yarn, then crimps it to impart a wool-like texture that gives the carpet a superior pattern definition.

(14)

1962. Relax, It's Polyprop. Textile Industries 126(5): 57, illus.

Discusses the fiber polypropylene, the filament trade-name, Herculon, used by E. T. Barwick in two of the firm's carpet styles, Amboy and Appollo. Reports the fiber has been given torture tests in service, and commercially cleaned with no difficulty, using normal procedures.

(15) Abrams, E., Cox, Herbert, and Milner, Gladys

1960. Methods to Improve Resilience of Cotton Pile Yarns in Soft Floor Coverings. Amer. Dyestuff Reptr. 49(1): 34.

Discusses the undertaking to improve the compressional resilience of carpet yarns by the application of synthetic latices with and without aminoplasts to carpet cotton yarns.

(16) Adams, Francis

1940. Carpet Industry Adopts Rayon. Rayon Textile Monthly 21(1): 31-32.

Reports the status of rayon for carpets as being raised from a tentative trial to a full-fledged position. The report is based on opinion of department store buyers.

(17) Ashcroft, A. G.

1962. Man-Made Fibers Answered Carpet Industry's SOS. Textile Industries 126(8): 75-78.

Discusses man-made fibers as an integral part of the carpet picture. Depicts the transitional changes in the fiber used in carpets including wool, rayon, nylon, textured nylon, acrylics, and modacrylics, and polypropylene.

- (18) Barach, J. L., and Rainard, L. W.  
1950. Effect of Crimp on Fiber Behavior. *Textile Res. Jour.* 20(5): 308-316, illus.  
Discusses the importance of natural crimp in wool. Shows a method of crimping wool artificially. Demonstrates the effect of wear and the coverage of crimped and uncrimped materials. Attempts to correlate variation and degree of crimp with resultant changes in the processing and product characteristics.
- (19) Bhogale, G. D., and Whiteley, K. J.  
1963. Some Rheological Properties of Indian Carpet Wools. *Textile Res. Jour.* 33(2): 161.  
The authors provide some significant research results on six Indian carpet wools on objective measurements on single-fiber properties which provides data on the comparison of stress-strain of the Indian and Australian wools. The research shows the differences in the primary and secondary fiber ratio responsible for the differences in stress values between the Indian carpet wool and a fine Merino wool.
- (20) Boyo, Gene  
1953. Progress in Making Carpets. *Modern Textile Magazine* 34(5): 34-35.  
Discusses the introduction of rayon carpet fiber, also the development of the tufting industry.
- (21) Cooper, Jene, Chairman (Tenn.)  
1957. Tariff Treatment on Wool. (Hearings before a Subcommittee of the Committee on Ways and Means, House of Representatives, 84th Cong., 2d sess. on H.R. 12227--A Bill to Amend the Tariff Act of 1930 Relative to Import Duties on Wool.) Washington, D.C., U.S. Government Printing Office.  
Reports the hearings on H.R. 12227. This bill would amend the Tariff Act of 1930 so as to suspend for a period of 3 years the import duties on certain coarse wools in the manufacture of certain cloth articles such as carpets and other floor coverings. Changes would provide carpet manufacturers with wools as fine as 46s for use in carpets and rugs.
- (22) Crone, H. R.  
1952. Fiber Blends as Carpet Surface Yarns. *Textile Inst. Jour.* 43(8): 533-556.  
Discusses the use of manmade fibers in woolen spun blends for carpet surface yarns. Consideration is given to the influence of the physical characteristics of the blend components, the blending, carding and spinning of the fiber blends, the behavior of the blends during scouring, dyeing, and processing.

- (23) Fenzel, T. G., Romer, M., and Fok, S. M.  
1956-1957. How Industrial Rayon Corporation Nylon Behaves in Carpets.  
Modern Textiles Magazine 37(10,11,12): 39-40, 33-34; 38(5): 35-36,  
illus.  
Reports in 4 parts: (1) The concern with the relative cost and appearance of various carpets made of nylon-blended rayon; (2) the changes in fabric appearance and handle of different blends such as in the area of 30 to 50 percent nylon blend; (3) crush, recovery, and matting characteristics as determined by actual floor tests; and (4) results on tests on wear, soiling, stain removal, and electrostatic behavior.
- (24) Kershaw, S.  
1947. Carpet Yarns. Jour. Textile Inst. 38(9): 431-433.  
Discusses wools used by carpet makers. Describes briefly four stages in carpet manufacture: spinning; folding and cabling; reeling, scouring, and dyeing; and rewinding on cones.
- (25) Langstaff, W. T., Dyer, R. F., and Crossman, J. M.  
1959. Verel in Carpeting. Modern Textiles Magazine 40(3): 42, 44-47, illus.  
Discusses Verel carpet fiber properties, fiber dyeing and processing, and the carpet manufacturing and performance.
- (26) Mahal, G. S., and others  
1951. Bickner Wool, A. Leading Carpet Wool, and It's Improvement.  
Textile Res. Jour. 21(2): 91-101.  
Discusses special attention given to the improvement of sheep and wool in India. Bickner and Indian wool unique for its length, color, quality, and loftiness is a leading carpet wool and is the basis of a study reported by the authors. The origin of the samples, preparation, technique for analysis and results are discussed.
- (27) Mills, W. D., Chairman (Ark)  
1960. Permanent Suspension of Duties on Coarse Wools (Hearing Before the Committee on Ways and Means, House of Representatives, 86th Congress, 2d sess. on H.R. 9322, A Bill to Make Permanent the Existing Suspension of Duties in Certain Coarse Wools.)
- (28) Noechel, F. W.  
1960. Caprolan Leads in Carpet Test Conducted by Allied Chemical.  
Modern Textile Magazine 41(5): 54, illus.  
Reports a wear test conducted by laying Caprolan textured filament nylon, wool, and acrylic fiber carpet on the stairs in Pennsylvania Station, New York, and subjecting them to wear by an estimated 1,500,000 commuters. The report credits Caprolan with retaining the greatest proportion of the original pile height and weight.

- (29) Reynolds, William  
1959. Some Facts About Carpet Fibers. Modern Textiles Magazine 40(5): 47-48.  
Discusses the diminishing sources of wool and the introduction of cotton, rayon, nylon, and acrylics in the carpet industry.  
Mentions the growth of the tufting industry and the confusion for consumers in the choice of carpets and rugs.
- (30) Richardson, Graham, and Lynch, J. W.  
1958. Nylon Carpet--Growth and Technology. Amer. Dyestuff Repr. 47 (9): 617-627, illus.  
Emphasizes the tremendous growth of nylon fiber in carpeting and gives as reasons it's durability, recovery from crushing, price stabilization, versatility as to spinning systems, ease of cleaning, ease of dyeing to a vast range of colors, and resistance to mildew and insects.
- (31) Richardson, Graham, and Stanley, Harry  
1962. How Du pont Developed 501 Filament Nylon for Carpets. Modern Textiles Magazine 43(2): 49-54, illus.  
Analyzes the mechanical functions of a carpet and specifies in engineering terms the attributes that a carpet fiber or yarn must posses to be acceptable.
- (32) Robinson, George  
1952. Wool and Other Fibers as Components of Carpet Pile Yarns. Jour. Textile Inst. 42(8): 519-530.  
Discusses all wool blends, woolen and worsted blends, and blending procedures. Gives some advantages of manmade fibers over wool as components of carpet pile yarns.
- (33) Rogers, C. E.  
1956. More Texture in Nylon Carpets. Modern Textile Magazine 37(5): 38.  
Discusses a new method of twist-setting reported by Industrial Rayon Corporation. Mentions several all-nylon carpets knitted on raschel machines.
- (34) Santymire, M.  
1959. Twist-Setting Spun Nylon Carpet Yarns. Modern Textiles Magazine 40(12): 65-68.  
Recommends a procedure for twist-setting nylon carpet yarns with either hot water or steam. Discusses important factors in the manufacture of spun nylon yarns for carpets, such as fiber selection, construction, relaxing, twist-setting, and dyeing.

- 5) Schappel, J. W.  
1956. Performance Characteristics of Synthetic Fibers, Wool, Viscose, and Blended Fibers in Axminster Carpets. *Textile Res. Jour.* 26(3): 211-226.  
Reports the soiling and crushing characteristics of nylon, Dacron, Orlon, Saran, Dynel, acetate, wool, and some blends of synthetics and wool in Axminster carpets. The relationship of soiling properties to fiber surface smoothness and available surface area is discussed.
- 36) Semmler, R. E.  
1958. Recent Developments in Lofted Acetate Yarns for Apparel and Home Furnishing Fabrics. *Textile Res. Jour.* 28(9): 765-768, illus.  
Reviews the characteristics of lofted acetate yarns which relates to its performance in the carpet mill in producing attractively styled carpets and compares the results of laboratory performance tests to actual consumer experience.
- 37) Truitt, J. A.  
1940. The Carpet Trade Needs Rayon - Is Rayon Ready? *Rayon Textile Monthly* 21(1,2): 33-34, 101-103.  
Surveys the existing economic conditions which are peculiar to the carpet trade's wool problems. Explains characteristics of carpet wool as opposed to apparel wools. Discusses the customer's requirements for carpets and rugs. Mentions unfavorable properties of carpet wool and favorable factors for use of rayon.
- 38) \_\_\_\_\_  
1941. Staple Rayon Expands in Carpet Trade. *Rayon Textile Monthly* 22(8): 457-458.  
Discusses four different types of staple rayon available to rug manufacturers and the research done to improve the crush resistance problem.
- 39) \_\_\_\_\_  
1942. Rayon Staple Fiber for Carpets Improved by Research. *Rayon Textile Monthly* 23(10): 612-613.  
Compares early development of carpet rayon with later progress. Reports the wear-life and soiling resistance of rayon staple versus wool on experimental fibers produced in a pilot plant. Discusses resilience and difficulties in finding suitable measures for it.
- (40) United States Tariff Commission  
1959. Wools For Carpets and Papermakers Felts (Report on Investigation No. 34, Under Section 332 of the Tariff Act of 1930, Pursuant to a Resolution of the Committee on Finance of the U.S. Senate.) Washington, D.C.  
Reports information on world production of wools, which are suitable for use in manufacture of carpets and rugs, and amount available to U.S. from domestic and foreign sources; the characteristics of domestic wools and imported wools from standpoint of relative suitability for carpets and rugs; and analyzes the present method of grading and sampling imported wools.

(41) Welton, R. S.

1959. The World Carpet Situation and Its Relation to World Wool Production. U.S. Dept. Agriculture, Foreign Agr. Service (FAS.-M- 72: 45). Washington, D.C.

Discusses the grading of wool and the tariff history of carpet wools. Gives information on the carpet wool producing countries and their exports and on the consumption of carpet wool in the U.S.

## BACK-SIZING OF CARPETS AND RUGS

With the tufting method of rug construction, it is necessary to use a substance to keep the tufts from pulling out. Synthetic latices are used. They have introduced many problems in floor coverings.

(1) Anonymous

1958. Carpet With A Bounce. Textile Industries 122(6): 110, illus.

Discusses the tufted carpet with foam-rubber padding vulcanized to the carpet's latex coating. Explains that foam quality is something on which little "dodging" can be practiced because the material is unpredictable to formulate and to take liberties with standard procedure or ingredients is to invite trouble.

(2)

1957. The Need For Standardizing Accelerated Aging Tests For Latex-Backed Fabrics. Amer. Dyestuff Repr. 46(5): 345.

Points up the problems involved in any one of a variety of synthetic latices used as a backing compound base for rugs and upholstery fabrics. Describes some of the complex conditions that exist. Cites tests now used and emphasizes need for standard test methods.

(3) Bramer, G.

1960. The Chemistry and Application of Rug-Backing Compounds. Textile World 110(1, 2, 3, 4, 5, 6, ): 79, 103, 69-70, 70-72, 78-79, illus.

Discusses the properties of latices, natural and manmade backing compounds from the following standpoints: What determines the formula; how they are made and the methods of application; what goes into precoating compounds; how after-coating compounds are made; where special blends are useful; and how to use laminated foams and some of the problems.

(4) Crone, H. R.

1957. The Back-Sizing of Carpets. Textile Inst. Jour. 48(6): 404-415.

The process by which solutions of stiffening materials, usually starches are applied mechanically to the back of a carpet is discussed. Mention is made of the reasons for back-sizing.

- (5) Hager, O.  
1954. Backsizing Carpets and Rugs. Amer. Dyestuff Repr. 43(3): 172-173.  
Discusses in generalities the subject of back-sizing carpets and rugs from the standpoint of the supplies and materials for preparing sizing.
- ## DYEING CARPETS AND RUGS
- Many dyeing problems are arising with the large-scale introduction of synthetic fibers in the carpet industry. Some of the problems are discussed in the references.
- (1) Anonymous  
1956. Latex Compounds Affect Dyes in Rubber-Backed Carpeting (Abstract) Textile World 106(12): 109.  
Describes the experiment to determine the effect of various accelerators on the shade of dyes commonly used on spun-viscose tufted carpets.
- (2) \_\_\_\_\_  
1958. How Roxbury Dyes Carpet Wools. Textile World 108(2): 122-123, illus.  
Explains how the stock is dyed, how Wiltons are mothproofed, and how package dyeing of wool yarn is done. Gives a brief description of each step in the procedure of package dyeing.
- (3) \_\_\_\_\_  
1962. A New Way To Dye Carpets Open-Width. Textile World 112(6): 78-80.  
Discusses the problem of getting good level dyeing on different makes of filament-nylon carpets in less time, using the open-width dyeing method. Offers solution in use of a circulating pump, boosting the speed of the carpet by modifying the drive of the dyebeck.
- (4) \_\_\_\_\_  
1962. Dyeing Big Tufted Carpets. Textile World 122(10): 106-108, illus.  
Discusses how one company dyes big tufted carpets--12 and 15 feet--mainly of continuous filament nylon-face in 100- to 400-foot lengths with loads made up to weigh 575 to 600 pounds where the order permits.
- (5) \_\_\_\_\_  
1963. Dyeing Filament Nylon For Carpets. Man-Made Textiles 40(10): 87-89.  
Discusses dyeing of filament nylon, 6 and 66, to be used as pile for carpets. Quotes some procedures recommended in Technical Bulletin C-4, April 1963, Allied Chemical Corporation.

- (6) Anonymous  
1963. A Practical Way to Piece-Dye Acrylic Carpets. *Textile World* 113(8): 83-84, illus.  
Discusses the methods for dyeing Coronet's line of Acrilan carpeting with the problems peculiar to the fiber.
- (7) \_\_\_\_\_  
1963. Dyeable Polypropylene, New Olefin Resin Yields Fiber Dyeable In A Full Range of Colors. *Chemi. Engin.* 70(8): 104.  
Announces Union Carbide Plastic Company's new Bakelite-resin-brand polypropylene. Gives the results of tests for dyeing and its colorfastness to light and washing.
- (8) Beal, W.  
1958. Some Recent Developments in Dyeing For The Carpet Trade. *Jour. Soc. Dyers and Colorists* 74 (19): 677-682.  
The author reviews the way in which many dyeing problems arising with the large scale introduction in synthetic fibers are being overcome and discusses the developments that have taken place in dyeing all-wool carpets.
- (9) Blore, J. H.  
1956. Carpet Tufting Yarns From Solution-Dyed Rayon. *Textile World* 106(11): 136-137. illus.  
Discusses solution dyeing of rayon staple including processing of color stock in units (dark color shades cannot contaminate light shades), the color system used for blending. Describes the splicing of yarns with latex eliminating knots.
- (10) Campbell, M. V.  
1950. The dyeing of Direct Cotton Dyes on Fibro Carpet Yarns in Hard Water. *Jour. Soc. Dyers and Colorist* 66(2): 120-132.  
Illustrates the difficulties that may be encountered in the dyeing of direct cotton dyes in hard water and offers suggestions for overcoming them.
- (11) Clapham, H. F.  
1945. Dyeing Wool Blends and Other Fibers for Carpets. *Amer. Dye-stuff Reptr.* 43(3): 141-142.  
Discusses the changes in dyeing carpets resulting from the introduction of fibers other than wool into carpet manufacture, and new methods of dyeing applicable to wool namely continuous stock dyeing, high temperature dyeing, and neutral dyeing with new types of metallized dyestuffs with superior fastness properties. Reviews the current methods of dyeing different fibers used in carpets. Describes substantial improvements in obtaining better fastness to consumer tests in dyeing wool raw stock.

- (12) Cooper, F. H.  
1959. Dyeing Twist-Set Nylon. *Textile Industries* 123(5): 96-98, illus.  
Discusses factors that have led to a strong move on the part of many tufted carpet manufacturers into new piece-dyed programs. Reviews some critical areas in twist-dyed nylon such as the starting temperatures, pH values, both starting and running, rate of temperature rise and liquor ratio.
- (13) Cuthbertson, G. R., and Others.  
1963. A New Dyeable Polypropylene Carpet Fiber. *Modern Textiles Magazine* 44(9): 89-96, illus.  
Discusses polypropylene carpets in three parts: (1) Polypropylene as a carpet, fiber-dyeing characteristics, and carpet characteristics; (2) the research and development efforts that have been concentrated to produce a carpet fiber, not a general purpose fiber; and (3) the development of satisfactory piece dyeable fiber in contrast to a solution dyed fiber.
- (14) Fortune, R. J., and Paul, V. G.  
1961. Recent Developments in the Dyeing of Verel, Modacrylic Fiber. *Amer. Dyestuff Reprtr.* 50(5): 336-339, illus.  
Discusses low-temperature dyeing technique of tufted or woven floor coverings of Verel. Reports a complete range of shades is obtainable with selected dispersed neutral premetallized, and basic dyes.
- (15) Gaunt, A., and Robinson, P.  
1953. Dyeing in the Carpet Trade. *Jour. Soc. Dyers and Colorists* 69(5): 155-159.  
Relates problems experienced in normal day-to-day work in dyeing carpets in the trade. The importance of coloring of a carpet is illustrated in a table of reasons for selecting a carpet. Discusses a typical selection of dyes and methods of dyeing and faults met in dyeing.
- (16) Pinault, R. W.  
1955. How Barwick Dyes Tufted Rugs. *Textile World* 105(3): 108-108, illus.  
Gives the techniques of dyeing including the specially built dyebecks used in dyeing and finishing both stocks and piece-dyed rugs. Suggests ways to prevent side-to-center shading, and how to keep the rugs opened to full in the dyeing machine.
- (17) \_\_\_\_\_  
1956. How to Dye and Finish Cotton Rugs. *Textile World* 106(6): 118-119, illus.  
Gives briefly the steps in finishing the dense and lofty pile cotton and nylon-faced rugs, the pile face being formed of yarns that were made from dyed raw stock.

(18) Robinson, G., and Jagger, D.

1951. The Evolution and Development of Dyeing Within the Carpet Industry. *Jour. Soc. Dyers and Colorists* 67(12): 557-567.

Reviews the dyeing processes of antiquity used in the Oriental rug weaving centers and the developments of dyeing methods and equipment in England. Factors peculiar to dyeing in the carpet industry are also discussed.

(19) Wilkinson, George

1961. Dyeing Cumulofl Carpet Nylon. *Amer. Dyestuff Reprtr.* 50(10): 834-836, illus.

Discusses dyeing of cumulofl, a continuous filament textured nylon yarn developed specifically for use in the manufacture of carpets and rugs. The discussion includes piece and skein dyeing. The piece-dyeing includes discussion of jute-backed carpets and disperse-dyes and other dyes.

(20) Walmsley, L. L.

1945. Current Trend May Force Fast Colors For Rugs. *Textile World* 95(11): 111, illus.

Discusses the difficulties in volume production of high style self-toned carpets, and the need for faster vat colors, also the viscose rug staple that can be dyed to match rug wools.

(21) \_\_\_\_\_

1955. Dyeing Rayon Tufted Carpeting (Abstract.) *Textile World* 105(11): 107.

Discusses the dyeing of tufted rayon carpets with direct colors, the causes of discoloration, and the application of soil-resistant finishes.

(22) \_\_\_\_\_ Sollenberger, W. S., and Feyler, D. P.

1956. A Study of Rayon in Tufted Carpeting. *Amer. Dyestuff Reprtr.* 45(1): 30-33.

Data are presented relative to the dyeing and finishing of 100-percent rayon blended with nylon, acetate, and wool in tufted carpeting. Piece dyeing and stock dyeing factors with direct and stock dyeing are discussed. Emphasis is placed on the necessity for dyestuff selection as related to fastness requirements and level dyeing to withstand carpet cleaning techniques. Some information is given on soil-resist treatments.

(23) Woodruff, J. A.

1955. How to Dye Tufted Rayon Carpets. *Modern Textiles Magazine* 36(6): 57-58, illus.

Discusses the steps in different procedure of dye application currently successful in use and the problem of side-to-center shading in dyeing.

24) Woodruff, J. A.

1955. Dyeing and Finishing Rayon Tufted Carpets. American Dyestuff Reptr. 44(8): 636-640, illus.

Discusses the growth of the tufted industry and the importance of piece dyeing. Mentions the problems of attaining levelness of dyeing and the avoidance of streaks and side-to-center unevenness. Three procedures for dyeing are recommended. Offers a list of dyes that minimize streaks.

25) Wygand, W. J.

1957. Recent Developments in Carpet Dyeing. Amer. Dyestuff Reptr. 46(12): 987.

Describes recent developments in dyeing procedures for stock, yarn, and piece goods. States that pack-dyeing procedures should continue to grow in popularity and the pad-steam process for carpets probably will be established soon as a fully commercial dyeing procedure.

## SOILING AND CLEANING OF CARPETS AND RUGS

The references will give some insight into the major problems of soiling and cleaning of carpets and rugs. The popularity of light values in colored rugs for homes has increased the need for more and better information on the processes of soiling and cleaning of all the fibers used in floor coverings.

(1) Anonymous

1943. Rug and Upholstery Cleaners. *Textile Colorists* 65(8): 377.

Suggests foam cleaners as possibly the best general type. They do not permit overwetting of the cloth which might result in shrinkage or damage to jute backing.

(2) \_\_\_\_\_

1949. On-Location Carpet Cleaning. *Soap and Sanitary Chemicals* 25(9): 39.

The article is based on a report prepared by York Research Corporation technical consultants to the American Hotel Association on a study in their laboratories sponsored by the Association, The Carpet Institute, and the National Institute of Rug Cleaners. Soap and detergents were used to clean standard soiled carpets according to standard procedures. Reports that wet shampooing can vary extensively even when the same shampoo is used according to the type of operation, skill of the operator, and selection of equipment used.

(3) \_\_\_\_\_

1952. The Midas Touch. *Chemical Week* 70(2): 51-52, illus.

Discusses the difference of opinion among professional carpet men on effectiveness of the product Glamorene as approved in the Readers Digest article called Glamorene.

(4) \_\_\_\_\_

1953. Rugs That Stay Cleaner. *Chemical Week* 73(10): 48-50, illus.

Discusses Chemical treatment for rugs and carpets, designed to retard soiling. The discussion is concerned with their application at the mill and the various manufacturers who are working on soil retardants. Reports colloidal silica treatments most widely used.

(5) \_\_\_\_\_

1955. No Dirt Under Our Feet. *Chem. and Engin. News* 33(10): 440.

Discusses Juvenon Soil Retardant R. Compares it with colloidal silica also being used as a soil retardant. Reports that Juvenon has a less harsh hand than colloidal silica products.

(6) \_\_\_\_\_

1955. No Soil, No Silica. *Chemical Week* 77(7): 42.

Cyana Soil Retardant, a product of American Cyanimid, is discussed. Reports that Cyanimid claims its tests show Cyana will keep carpets subject to foot and airborne dirt clean up to 5 times longer than untreated articles.

- (7) Anonymous  
1955. Silica Versus Soiling. Chemical Week 76(5): 74, illus.  
Discusses Du ponts Ludox, an antisoiling treatment for rugs and carpets making use of colloidal silica. Describes how the antisoilers work and tells of the licensing arrangements worked out with manufacturers for mill-treating rugs.
- (8) \_\_\_\_\_  
1959. "Mystery" Rug Stains Due to Water Spills Lab Technicians Find. Textile Industries 123(1): 107, illus.  
Discusses the reason of yellow or brown stains on rugs produced by pure water alone. Reports the source of discoloration is the backing material which is usually jute, paper, or unbleached cotton, each of which is subject to the natural process called cellulose degradation--the same process which causes old newspapers to turn yellow. The tufts of the pile on wet rugs act as a wick bringing the brown water to the surface.
- (9) Barager, A.  
1959. Rug Cleaning Ability of Vacuum Cleaners. Jour. Home Econ. 51(2): 115-117.  
Describes a new test procedure for evaluating the amount of dirt removed from rugs by vacuum cleaners. Data presented shows the type of cleaning that can be expected with representative vacuum cleaners when tested according to the test procedure.
- (10) Cheetham, R. C.  
1958. Important Factors In The Soiling Of Carpets (Abstract) Amer. Dyestuff Reptr. 47(10): 750.  
Discusses the causes of carpet soiling due to presence of grease or oil on the pile fiber; the need for using easily removable spinning oils for the processing of yarns on the woolen system. Points out that in addition to soiling by contact with dirt a carpet may assume a darker or shady appearance by virtue of differences in light reflectance from the fibers in the pile.
- (11) Consumer Research  
1942. Rugs and Upholstery Shampoos. Consumer Reports 7(6): 145-146.  
Reports the rating of 9 brands of soapless and 16 brands of soap shampoos and offers some pointers on using them.
- (12) \_\_\_\_\_  
1945. Some Popular Detergents, and Fabric and Rug Cleansers. Consumer Res. Bul. 16(7): 21-23.  
Discusses Vapoo, Powder-ene, Enduro Rug Re-Nu, Foamclem, Woolfoam, and Salko. Mentions the content claims in advertising and gives results of the tests of each one.
- (13) \_\_\_\_\_  
1950. Cleaning Rugs and Carpets on the Floor. Consumer Res. Bul. 26(8): 12.  
Discusses on-location cleaning methods and shampoo materials. Gives advantages and disadvantages of soap and synthetic detergents.

(14) Consumer Research

1952. "On-Location" Cleaners, Including Glamorene. Consumer Res. Bul. 30(10): 24-26.

Discusses the trend of light-colored rugs, cleaning schedules, and on-location cleaning with Glamorene. Reports Glamorene easy to use, effective in removing spots of oil and grease, cleaned and brightened surface of the rugs.

(15)

1954. Rug and Upholstery Cleaners. Consumer Reports- 1955 Buying Guide Issue 19(12): 138-140.

Reports tests of shampoos and powder cleaners. Gives some advice on the directions on the cleaners. Rates them for acceptability.

(16)

1956. Treating Rugs with Soil Retardants. Consumer Res. Bul. 38(8): 20-21.

Suggests that many of the newer carpets tend to soil more quickly than wool. Tests show on treated samples of lighter colors a slightly diminished rate of soil accumulation when exposed to heavy traffic for 3 months.

(17)

1962. Spring Cleaning, Particularly of Rugs, Takes "Elbow Grease." Consumer Res. Bul. 45(4): 36-37.

Points up the thorough job that can be done by a professional cleaner in a cleaning plant. Reports a test of cleaning carpets on a high school floor, the conclusion was that a really thorough cleaning was needed every 2 years.

(18) Consumer Union

1951. Rugs and Upholstery Cleaners. Consumer Reports - Buying Guide Issue 16(12): 208-210.

Reports the testing of 19 brands of rug and upholstery cleaners. Found that more than one-half were not acceptable. Lists ratings as excellent, good, fair, and poor.

(19) Cormany, E. M.; and Wenger, Allene

1962. A Comparison of Cleaning Methods on Selected Tufted Carpets. Jour. Home Econ. 54(3): 212-216.

Reports the apparent effectiveness of soil removal by two home cleaning methods and one commercial method. Conclusions show lack of agreement between objective and subjective soil-and-cleaned carpet data.

- (20) Fletcher, H. M., and Hensley, M. L.  
1959. Effect of Finishes on Soiling and Cleaning of Cotton Carpets. Jour. Home Econ. 51(4): 277-282.  
Reports a study made of the resistance to soil and the behavior in cleaning 12 cotton broadloom floor coverings of white, pink, green, and gray of moderate or low chroma ranging in value from 4.5 to 9.3. The effects of three soil retardant finishes were evaluated by comparison of treated and untreated rugs during service and after washing by two methods--reciprocating brush and wash wheel.
- (21) Floria, P. A., and Merseau, E. P.  
1955. Control of Appearance Due to Soiling; Changes in Carpet During Use. Textile Res. Jour. 25(7): 641-649, illus.  
Discusses the methods by which carpets become soiled, the mechanism by which soil is retained on carpet fibers, the change of color due to soiling, standardizing and controlling type of soil for testing and test methods, and commercial application of anti-soiling agent.
- (22) Fortress, F., and Kip, C. E.  
1953. Factors Influencing the Soiling of Acetate Carpets. Amer. Dyestuff Reprtr. 42(6): 349-359.  
Discusses the causes of carpet soiling due to presence of oily substances that are attached to pile fiber in the carpet manufacturing process. Describes briefly the manufacture of a typical Axminster carpet showing how each stage of the process is critically examined for possible contribution of oily substances to the fiber.
- (23) Fountain, S. F.  
1959. A Comparison of Four Methods of Cleaning Acrilan Carpets and Wool Carpets (Masters thesis.) University of Tenn., Filed at University Library, Knoxville, Tenn.
- (24) Hensley, M. L., and Ridgely, R. E.  
1963. Effect of Soiling and Cleaning on Cotton Floor Coverings of Selected Colors. Jour. Home Econom. 55(3): 173-178.  
Reports the color changes on cotton rugs in service conditions and the attempts to correlate subjective and laboratory ratings of the changes.
- (25) Herrick, O. E., and Cooper, M. M.  
1955. Comparison of Rug Cleaning Methods. Jour. Home Econom. 47(6): 406-409.  
Reports a study of home dry cleaning agents. Floor soiled rugs of 100 percent wool, 50 to 50 percent wool-rayon, and 100 percent cotton were cleaned with 11 different cleaners. States no one cleaner was equally effective on all fibers. Carpets cleaned with soap seemed to resoil to a greater degree than those cleaned with a synthetic detergent.

- (26) Hinek, E. A.  
1963. A Consumer's Look at Rug Cleaners and Cleaning. Consumer Res. Bul. 46(1): 21-22.  
Discusses problems the homemaker faces in buying rug cleaning services such as no practical way of determining the normal or reasonable price, the impossibility of comparison shopping, and no way to determine what is guaranteed and by whom.
- (27) Leonard, E. A.  
1949. Rug Cleaning. Soap and Sanitary Chemicals 25(4): 46-48, illus.  
Reviews soiling problems. Describes methods and materials used in cleaning. Mentions trend to location cleaning and use of synthetic detergents.
- (28) \_\_\_\_\_  
1949. Detergents for Rug Cleaning. Chemical Industries 64(4): 584-586, illus.  
Discusses cleaning processes for wool pile rugs. Establishes the following aims: Colors should be restored to original clarity and brightness; crushed pile should be straightened; foreign matter on or in rug should be removed; and spots, if any, eliminated.
- (29) \_\_\_\_\_  
1950. Evaluation Tests: For Chemical Specialists. Soap and Sanitary Chemicals 26(1): 42-44, illus.  
Describes how rug cleaning compounds are tested in company laboratories. List factors affecting performance of rug cleaning compounds under chemical compounds, cleaning effectiveness, and resoil properties.
- (30) \_\_\_\_\_  
1950. The Problems of Rug Cleaning. Amer. Dyestuff Repr. 39(6): 437.  
Discusses factors which constitute the problem for rug cleaners and the methods used by rug cleaners.
- (31) O'Brien, J. S.  
1963. The Soiling of Carpets: A Report of AATCC Committee RAS 7. Amer. Dyestuff Repr. 52(5): 377-381.  
Discusses the work of the committee on soiling of carpets which began as a subcommittee of Standard Soils late in 1955. Presents the goals of the Committee with steps that have been negotiated and ones that are out of reach.
- (32) Preston, A. M.  
1945. Rug and Carpet Cleaners. Soap and Sanitary Chemicals 21(4): 71.  
Discusses the composition of rugs and carpets and of dyestuffs used. Describes experiments on washing wool with a number of detergents. Reports that soap left the greatest residue--a film of soap on a carpet will tend to pick up dust and dirt.

- (33) Sudnik, Z.  
1955. The Soiling of Carpets. Jour. Textile Inst. 46(10):T668-T670.  
Reports an experiment to investigate ways of reducing the soiling of carpets. The procedure includes trials on pieces of carpet laid in a busy passage for a period of 2 months and tumbler tests carried out by using artificial soil. Results showed the two tests agreed very well.
- (34) Whitney, K. L., and Schappel, J. W.  
1954. Carpet Soiling. Amer. Dyestuff Repr. 43(3): 143-147.  
Discusses criteria peculiar to carpet soiling, the promotion of carpet soiling by oily contamination of fibers and through machinery lubricants or backing yarn oil lubricants. Suggestions are given for control of contaminants.

## SELECTION OF CARPETS AND RUGS

The selection of carpets and rugs is complex. The information on pile-face fibers lacks clarity and is very confusing to the consumer who selects a carpet or rug from two approaches; (1) The aesthetic--color, design, style and (2) the wear-life or durability. The listed references depict two approaches--that of the consumer and of the maker and salesman.

- (1) Anonymous  
1942. Nullifying Static Electricity in Rugs and Carpets. Rubber Age 52(12): 228.  
Reports a method of weaving rugs and carpets so as to nullify static electricity accumulation, patented in England by U.S. Rubber Co. The development in brief provides for the interweaving of a conductive yarn throughout the pile and backing of the carpet which runs into a rubber composition-treated backing that absorbs the static electricity generated through friction.
- (2) \_\_\_\_\_  
1960. All About Carpets. Good Housekeeping 150(2): 52-65, illus.  
Reports more than 20,000 people walked on more than 650 different carpets. Each sample spent 40 hours in a Fade Ometer, 48 hours in 180° F. oven, and was subjected to the sternest cleaning tests. Style, color, and suitability are illustrated in appropriate selections for a variety of looms.
- (3) American Society for Testing Materials - D 18.  
1940. Standard Methods of Testing Pile Floor Coverings. Textile Colorist 62(6): 407-409.  
Reports establishment of standards involving scope, sampling, test conditions, quantity--length, width, weight--moisture content and regain, total thickness, construction, and fastness of color to light.

- (4) Ashcroft, A. G.  
1947. People, Things, and Words. Rayon Textile Monthly 28(5): 259-262.  
Discusses consumer wants in carpets and rugs from two approaches, the aesthetic wants of style, color, design, general appearance and feel, and practical wants of durability of originality and durability of original structure and wear-life. Illustrates with pictures the usefulness of laboratory tests.
- (5) Barach, J. L.  
1949. Dynamic Studies of Carpet Resilience (Abstract.) Textile Res. Jour. 19(6): 355-362, illus.  
Shows the problem of measuring dynamic properties of a carpet. Carries the problem through several steps which lead to the development of dynamic load measuring equipment designed to evaluate differences of carpet construction.
- (6) Benson, E. W.  
1952. An Evaluation of Selected Types of Synthetic, Wool, and Synthetic and Wool Carpeting (Masters thesis.) 81 pp., Michigan State College (Filed at College Library, East Lansing, Mich.)
- (7) Blenda, Nancy.  
1958. Sound Intensity Levels in Houses With Different Floor Coverings (Master thesis.) (Filed in Library, Iowa State U. Ames, Iowa.)
- (8) Bresnahan, T. W.  
1959. What Consumers Want in Manmade Fiber Carpets. Modern Textiles Magazine 40(5): 45-47.  
Discusses the confusion due to the many new fibers in carpets. Indicates the consumer wants to know more about synthetics. Gives the following two things women resent: Why don't they get more help in stores? Why did the salesman have to promise too much? Makes four specific proposals for eliminating some of the confusion.
- (9) Consumer Research  
1945. If You're Buying a New Rug, Consider an Oriental. Consumer Res. Bul. 15(2): 15-18.  
Discusses the causes of shortage of wool carpets, the objections to use of rayon in carpets, the supply of Oriental rugs, their construction, materials, color, and design. Gives five suggestions for care of Oriental and other good rugs.
- (10) \_\_\_\_\_  
1947. Selection and Care of Rugs and Carpets. Consumer Res. Bul. 21(1): 16-18, illus.  
Discusses in part one, selection of plain and pattern rugs, harmonizing colors, judging suitability in terms of costs, and materials used. Tells how to examine a rug for quality. Discusses in part two types of construction--Wilton, velvet, tapestry, chenille, Axminster--and care of rugs.

(11) Consumer Research

1949. Two Products for "Skid-Proofing" Rugs. Consumer Res. Bul. 24(9): 14.

Discusses two liquid compounds used for skid proofing Griptex and Rug-Seez as to their method of application. Reports results of tests made.

(12)

1952. The New Carpet, Consumer Research Tests Wool, Cotton, and Synthetics. Consumer Res. Bul. 30(9): 13-17.

Discusses causes of increase in price of wool, advantages claimed for carpet rayon fiber, the rise of popularity of cotton broadloom; the selection of good rugs in terms of weave construction; and the double-faced Olson rug.

(13)

1956. Problems in Buying a Rug. Consumer Res. Bul. 37(1): 28-30, illus.

Surveys briefly the revolution in the rug industry with the introduction of the tufting technique in carpets and rugs, and with the use of cotton and rayon fibers. Reports on complaints on latex backing and change in color. Gives a dealer's chart for customer guidance showing probable life expectancy of various rugs and carpets based on price.

(14) Consumer Union

1958. Buying Rugs and Carpets. Consumer Reports 23(11): 558-563, illus.

Discusses judging carpets using three major criteria--fiber, pile, density and height--also mentions resilience, resistance to soil and ease of cleaning, flamability, static electricity, pilling, color-fastness and blends. Makes some recommendations for the fiber content in high-traffic areas and where soiling conditions are less severe. Gives some information on wall-to wall carpeting, surface texture, color, design, stairway installation, padding, and price versus quality.

(15)

1959. Buying Guide Issue, 1961. Consumer Reports 25(12): 159-161.

Discusses pile and workmanship of carpets and rugs, cost and wear, and flamability. Gives a flamability chart for representative carpets using Acrilan, Orlon, and Verel fibers.

(16) Ehrman, H. A.

1945. The Importance of Standard Test Methods, Ratings and Terminology for Colorfastness. Amer. Dyestuff Repr. 34(6): 255-256.

Discusses in a symposium the correlation of test methods with consumer end uses.

(17) Gale, I. H., and Hamway, D.

1954. Carpet Planning For The Salesman. 96 pp., illus, New York, N.Y., Fairchild Publications.

Gives technical information needed by a salesman to plan a wall-to-wall installation accurately and effectively.

- (18) Harris, C. M.  
1955. Acoustical Properties of Carpet. Jour. Acoustical Soc. America 27(11): 107-108, illus.  
Points up the lack of information on the acoustical properties of carpets. The scanty data available makes no distinction among various types of carpets.
- (19) Hensley, M. L., and Fletcher, H. M.  
1955. A Service Study of Twelve Cotton Broadloom Floor Coverings. Jour. Home Econ. 47(2): 110-114, illus.  
Reports an in service study of twelve cotton broadloom floor coverings. Gives the reasons for the study, the selection of the floor coverings, the procedure used, and results.
- (20) Hurley, Patricia  
1961. Factors Influencing the Selection of Rugs and Carpets, and the Resulting Satisfactions (Masters thesis.) The Woman's College, U. of North Carolina. (Filed at College Library, Greensboro, N.C.)
- (21) Johnson, B.R.  
1962. Association of Seven Values with Choice of Floor Coverings in New Farm Houses (Masters thesis). Iowa State U. (Filed at University Library, Ames, Iowa.)
- (22) Melz, L.  
1959. A Retailer Speaks. Textile Industries 123(5): 111.  
Discusses the increase of tufted carpets from the standpoint of consumer acceptability. States that in the consumer's mind there is no difference between a tufted, a woven or a knitted carpet.
- (23) Schiefer, H. F.  
1942. Wear Testing of Carpets. Jour. Res. Natl. Bur. Standards 29(11):333-379 pp., illus. Washington, D.C., Supt. of Documents, U.S. Government Printing Office.  
Describes the National Bureau of Standards and Shawmut machines for testing the wear resistance of carpets, a gage for measuring the length of tuft from a carpet. The effect of systematic changes in carpet construction on the wear resistance was investigated with each machine and under severe service conditions.
- (24) Solomon, G. L.  
1963. Quality and Taste Levels Rise for Carpets, Draperies, and Upholstery. Modern Textiles Magazine 44(1): 23-24, illus.  
Discusses briefly the replacement of home furnishings because of obsolescence versus demand for value; the newest fiber to be used in carpeting, polypropylene; the latest nylon filament Enkaloft; and Chemstran's Type 41 Acrilan.

## INSTALLATION OF WALL-TO-WALL CARPETING AND CARE OF RUGS AND CARPETS

- (1) Anonymous  
1962. A Complete Guide to Modern Floor Care. Redbook 118(4): 64-65.  
Gives practical suggestions for choice of carpets and rugs, for the care of them by using pads under them to prevent wear, by providing door mat and a place for parking wet rubbers, and by blotting stains before they soak in.
- (2) Beveridge, Elizabeth, Hawks, G. R., and Jebe, Emil  
1959. Carpet and Smooth Floor Covering-Maintenance Required and Satisfactions to Users. Jour. Home Econ. 51:(11) 780-785.  
Reports a study to obtain information concerning characteristics of carpet and asphalt tile in regard to cost of upkeep, acoustical effects, satisfactions to homemakers in terms of aesthetic qualities and changes in attitudes of homemakers resulting from experience with two types of floor coverings.
- (3) Dilts, M. E.  
1943. Carpets and Rugs. 38 pp., illus. North Canton, Ohio.  
The Hoover Co.  
Devotes a chapter to the history of carpet weaving. Discusses types of carpets, Oriental and Chinese, hand-tufted rugs and tapestries, power-loom carpets and rugs, hooked, braided and woven rag rugs, and the care and cleaning of rugs and carpets.
- (4) Duffin, D. J.  
1962. The Essentials of Modern Carpet Installation (Rev. from Carpet Laying and Estimating Handbook, American Carpet Institute). 324 pp., illus. Princeton, N. J., Von Nostrand Co.  
Presents a dependable guide to the latest techniques of installing all types and makes of carpets, together with approved methods of measuring and estimating for residential and commercial uses.

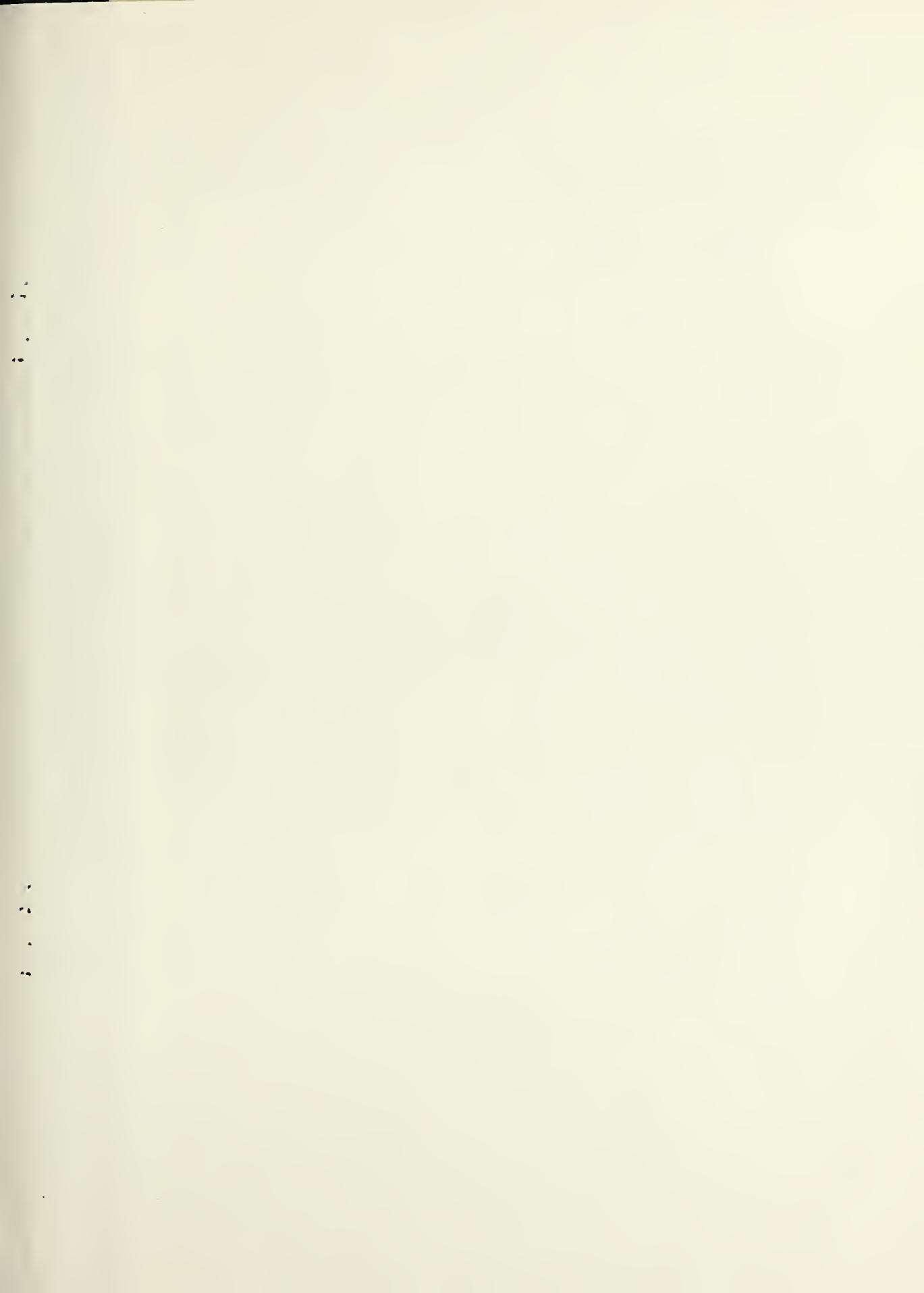
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